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What Is Claimed Is:

1. A device for holding measurement instruments formed from a plurality of structure elements connected to one another and made from at least one material, the at least one material having a very low coefficient of thermal expansion α , wherein the structure elements on which the measurement instruments are arranged are secured between at least two structure side parts in such a way that the thermal expansions of the structure side parts and of the connections have no effect in the measurement direction of the measurement instruments.
2. The device as claimed in claim 1, wherein the structure elements at least approximately form a cuboid, the structure elements on which the measurement instruments are arranged being secured between the at least two structure side parts, the structure side parts being connected by means of a structure front part and structure back part secured between them, and the structure back part and the structure front part not being connected to the structure elements on which the measurement instruments are arranged.
3. The device as claimed in claim 1, wherein all the connections can be produced by means of connecting elements, while temperature fluctuations can only influence structure elements which do not bear any measurement instruments and are not responsible for determining positions in another component.
4. The device as claimed in claim 3, wherein the connecting elements are made from a material with a very low coefficient of thermal expansion α , in particular INVAR.

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5. The device as claimed in claim 1, wherein the plurality of structure elements having at least one material with a very low coefficient of thermal expansion α are made of a glass-ceramic or a metal alloy.
6. The device as claimed in claim 1, wherein the structure elements and/or the structure side parts are provided with cutouts.
7. The device as claimed in claim 2, wherein at least two connecting parts, which are connected to the structure side parts, are provided inside the cuboid.
8. A connecting device having a coefficient of thermal expansion α which deviates from a coefficient of thermal expansion α of two structure elements which are to be connected without stresses, each of the structure elements being gripped by means of a connecting element which is formed symmetrically with respect to the structure element and the connecting elements being connected to one another via securing means.
9. The device as claimed in claim 8, wherein the connecting elements are H-shaped in cross section and are introduced into an opening and/or cutout in the structure element in such a way that the material of the structure element is in each case arranged between limbs of the H-shaped connecting elements.
10. The device as claimed in claim 9, wherein an adhesive is introduced between the limbs of the connecting elements and the structure element.
11. The device as claimed in claim 8, wherein the securing means are designed as bolts.

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12. The device as claimed in claim 1, wherein measurement paths can be built up via laser interferometers, with an optical element being assigned at least one laser interferometer for determining position, which interferometer is fixedly connected to a structure element.
13. The device as claimed in claim 12, wherein absolute position values for the respective optical element can be calculated from all the values determined by the at least one laser interferometer for determining the position of the optical element.
14. A device for holding interferometers, formed from a plurality of structure elements connected to one another and made from at least one material, the at least one material having a very low coefficient of thermal expansion α , wherein the structure elements on which the interferometers are arranged are secured between at least two structure side parts in such a way that the thermal expansions of the structure side parts and of the connections have no effect in the measurement direction of the interferometers.
15. The device as claimed in claim 14, wherein the structure elements at least approximately form a cuboid, the structure elements on which the interferometers are arranged being secured between the at least two structure side parts, the structure side parts being connected by means of a structure front part and structure back part secured between them, and the structure back part and the structure front part not being connected to the structure elements on which the interferometers are arranged.

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16. The device as claimed in claim 14, wherein all the connections can be produced by means of connecting elements, while temperature fluctuations can only influence structure elements which do not bear any interferometers and are not responsible for determining positions in another component.
17. The device as claimed in claim 14, wherein the structure elements and/or the structure side parts are provided with cutouts.
18. The device as claimed in claim 15, wherein at least two connecting parts, which are connected to the structure side parts, are provided inside the cuboid.
19. The use of the device as claimed in one of claims 1 to 18 for measurements in an imaging device for microlithography.
20. The use of the device as claimed in one of claims 1 to 18 for measurements in mechanical precision measurement technology in the nanometer range.